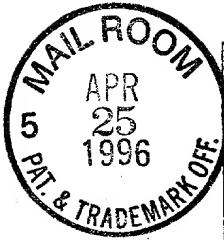


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DIVISION-CONTINUATION PROGRAM APPLICATION TRANSMITTAL FORM				ATTORNEY'S DOCKET NO.	
DOCKET NUMBER P-2127-40	ANTICIPATED CLASSIFICATION OF THIS APPLICATION: CLASS _____ SUBCLASS _____		PRIOR APPLICATION: EXAMINER FETSUGA, R.		ART UNIT 3105
<p>To the Commissioner of Patents and Trademarks:</p> <p>This is a request for filing a <u>IN-PART</u> <input checked="" type="checkbox"/> continuation <input type="checkbox"/> divisional application under 37 CFR 1.60, of pending prior application serial no. <u>08/432,245</u> filed on <u>APRIL 27</u> 19 <u>95</u>, of <u>GEORGE TASH</u> for <u>TOILET DRAIN PLUNGER</u>.</p> <p>1. Enclosed is a copy of the latest inventor signed prior application, including the oath or declaration as originally filed. I hereby verify that the attached papers are a true copy of the latest inventor signed prior application serial no. _____ as originally filed on _____ 19 _____, and further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.</p>					
Claims	(1) For	(2) Number filed	(3) Number extra	(4) Rate	(5) Calculations
Total Claims		- 20 =		X \$22	\$
Independent Claims		- 3 =		X \$74	
Multiple Dependent Claim(s) (if applicable)				+ \$230	
				Basic Fee	+ \$375.00
				2 mo. late Fee	+ 190.00
Reduction by 1/2 for filing by small entity (Note 37 CFR 1.9, 1.27, 1.28) if applicable, affidavit must be filed also.					-
				Total National Fee	\$565.00
<p>2. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. <u>16-2360</u>. A duplicate copy of this sheet is enclosed.</p> <p>3. <input type="checkbox"/> A check in the amount of \$ _____ is enclosed.</p> <p>4. <input type="checkbox"/> Cancel in this application original claims _____ of the prior application before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)</p> <p>5. <input type="checkbox"/> Amend the specification by inserting before the first line the sentence: This application is a <input type="checkbox"/> continuation, <input type="checkbox"/> division, of application serial no. _____, filed _____.</p> <p>6. <input type="checkbox"/> Transfer the drawings from the pending prior application to this application and abandon said prior application as of the filing date accorded this application. A duplicate copy of this sheet is enclosed for filing in prior application file. (May only be used if signed by person authorized by § 1.138 and before payment of issue fee.)</p>					

969240-462990

L.O.T. to 9 mays

informal

a. ☒ New ~~form~~ drawings are enclosed.

b. ☐ Priority of application serial no. _____ filed on _____ in _____

_____ is claimed under 35 U.S.C. 119.
(country)

☐ The certified copy has been filed in prior application serial no. _____
filed _____.

7. ☐ The prior application is assigned of record to _____.

8. ☐ A preliminary amendment is enclosed.

9. ☒ A verified statement claiming small entity status is enclosed in parent application
Serial Number 08/432,245, filed April 27, 1995 and is still proper.

10. ☐ Also enclosed _____

11. ☒ The power of attorney in the prior application is to

JOHN J. POSTA, JR.

5850 CANOGA AVE., SUITE 400

WOODLAND HILLS, CA 91367

a. ☒ The power appears in the original papers in the prior application.

b. ☐ Since the power does not appear in the original papers, a copy of the power in the prior application is enclosed.

c. ☐ Address all future communications : (May only be completed by applicant, or attorney or agent of record)

JOHN J. POSTA, JR.

5850 CANOGA AVE., SUITE 400

WOODLAND HILLS, CA 91367

4/24/96
(date)

[Signature]
(signature)

Address of signator:

☐ inventor(s)

☐ assignee of complete interest

☒ attorney or agent of record

☐ filed under § 1.34(a)

Reg # 20,275



08/637894

IMPROVED TOILET AND SINK DRAIN PLUNGER

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IDENTIFICATION OF RELATED APPLICATION

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BACKGROUND OF THE INVENTION

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FIELD OF THE INVENTION

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PRIOR ART

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This application is a continuation-in-part of U. S. Patent Application No. 08/432,245, filed on April 27, 1995, and entitled "Improved Toilet Drain Plunger" ^{now abandoned}

The present invention generally relates to water and sewage drain decloggers and more particularly to an improved type of toilet and sink drain plunger.

The usual type of plunger used for declogging sinks and toilet drains and the like comprises a vertical wooden or metal handle, to the bottom of which is secured an inverted thick deformable rubber or plastic cup. The cup is initially very difficult to compress down by the handle, requiring considerable force. It then characteristically suddenly gives way, causing a sudden surge of air to pass into the drain over which it is fixed. This frequently results in loosening of the drain

1 pipe connections and water leakage therefrom. Considerable
2 force is then needed to pull the handle up to provide suction
3 force on the drain. The seal between the bottom end of the
4 cup and the area around the sink or toilet drain hole is
5 frequently inadequate and the cup may slip about over the area,
6 reducing the suction afforded by the cup.

7
8 Toilets and sinks have various curvatures in the area
9 surrounding the drain hole, making difficult the proper
10 seating of conventional drain plungers, especially toilet drain
11 plungers such as the above-described cup plunger. The most
12 efficient toilet and sink drain plunger available is that
13 shown in U. S. Patent No. 4,745,641. But even that plunger
14 is unable to seat securely over and hold in place around
15 certain toilet drain holes, due to the curved configuration
16 of the toilet around the drain hole.

17
18 Accordingly, there is a need for an improved type of
19 toilet and sink drain plunger which can seat securely over
20 or in the toilet or sink drain hole, regardless of the
21 curvature of the area around the drain hole. Such plunger
22 should be simple, efficient, capable of being easily
23 fabricated and used and be inexpensive and durable.

SUMMARY OF THE INVENTION

The improved toilet and sink drain plunger of the present invention satisfies all the foregoing needs. The plunger is adapted for use with a wide variety of sizes and shapes of sinks and toilets. Its bottom end can fit into or around the drain hole and provide an improved seal for improved declogging of the drain hole. Moreover, the plunger operates smoothly and with little effort. It avoids the sudden air surge through the drain pipe which can loosen it. The improved plunger is substantially as set forth in the ABSTRACT OF THE DISCLOSURE.

Thus, the plunger comprises an upstanding preferably vertical handle, to the lower end of which is permanently or releasably secured a bellows having a plurality of vertically stacked horizontally extending integrally interconnected pleats. The plunger further includes drain hole sealing means in the form of a vertically stacked series of integral drain seals connected to and/or forming part of the lower portion of the bellows. The seals and bellows can be formed in a single molding operation from plastic, rubber or the like. The handle can also be formed in the same molding operation, if desired. Accordingly the entire plunger can be of unitary construction. For such purposes, the portion of the mold which molds the handle can have an entry port which introduces into that portion of the mold a plastic which,

1 when molded, forms a rigid handle integral with the plunger
2 bellows, while the bellows portion of the mold can have a
3 separate entry port which introduces into the mold a plastic
4 which is flexible when molded but which integrally joins
5 to the handle.

6

7 The seals are of progressively smaller diameter from top
8 to bottom of the series and are of bulbous ring configurations,
9 except that the bottommost seal has a depending portion
10 which has a short vertical cylindrical configuration. The
11 seals effect their sealing on their external surface which
12 are on the outer surface of the plunger. The seals and
13 bellows have controlled flexibility and resiliency for
14 pre-selected deformability to improve their sealing and
15 pumping efficiency.

16

17 Various other features of the improved toilet and sink
18 drain plunger of the present invention are set forth in the
19 following detailed description and accompanying drawings.

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DRAWINGS

Figure 1 is a schematic side elevation, partly broken away, of a preferred embodiment of the improved toilet and sink drain plunger of the present invention, showing the plunger in a standing resting condition;

Figure 2 is a schematic side elevation of the plunger of Figure 1, shown with the bellows of the plunger fully collapsed, that is, compressed, such as occurs for the downward stroke when the plunger is being used for declogging a toilet or sink drain;

Figure 3 is an enlarged schematic fragmentary cross-section of the sealing portion of the plunger, illustrating the curvatures of the seals;

Figure 4 is a schematic top plan view of a plurality of toilets a, b, c, d and e, illustrating different toilet bowl openings into which the improved drain plunger of the present invention can fit; and,

Figure 5 is an enlarged, fragmentary, schematic side elevation, partly in cross-section, of the improved drain plunger of Figs 1-3, showing the plunger rings in sealing contact with the opening in a kitchen sink.

1 DETAILED DESCRIPTION

2

3 FIGURES 1-3:

4

5 Now referring more particularly to Figures 1-5 of the
6 drawings, a preferred embodiment of the improved toilet
7 and sink drain plunger of the present invention is
8 schematically depicted therein. Thus, plunger 10 is shown,
9 which comprises an elongated vertical handle 12, the upper
10 end of which is formed into an expanded knob 14 adapted to
11 comfortably rest in the palm of the hand of the plunger user.
12 Preferably, handle 12 is hollow, having a central space 16
13 therein to reduce its weight, and can, if desired, be formed
14 of ^{moldable} ~~modable~~, rigid, light weight plastic such as high density
15 polyethylene plastic or the like.

16

17 The bottom portion 18 of handle 12 may include ~~external~~
18 integral threads 20 so that handle 12 can be releasably
19 connected to the bellows 22 of plunger 10.

20 *E2*
21 Bellows 22 is generally frusto-conical in shape, has a
22 central space 24 extending therethrough defined by a closed
23 transversely extending top 26 which preferably threadably
24 receives the bottom portion 18 of handle 12, sidewalls 28
25 integral with top 26 and depending therefrom, and a bottom
26 portion 30 integrally connected to top seal 32.

27

28

1 Sidewalls 28 are formed into a plurality of integral
2 horizontally extending vertically stacked interconnected
3 pleats 34. Pleats 34 are of progressively larger diameter
4 and preferably progressively greater flexibility from the
5 uppermost to the lowermost of said pleats 34, so that
6 pleats 34 easily and smoothly compress during use of
7 plunger 10 and efficiently nest together, as shown in Figure 2
8 when bellows 22 is collapsed by pushing down on handle 12,
9 avoiding the sudden air surging characteristic of conventional
10 toilet drain plungers. If desired, the wall thickness of the
11 pleats 34 can vary, for example, decreasing from the uppermost
12 pleats 34 to the lowermost pleats 34 to control their
13 flexibility.

14
15 Bellows 22 is formed of plastic or rubber, with the
16 pleats 34 being flexible and resilient and exhibiting
17 elastic memory. Bellows 22 can be formed in a single molding
18 operation from, for example, low density polyethylene plastic
19 mixed with, for example, varying proportions of copolymer of
20 ethylene and vinyl acetate as the means to control the
21 relative flexibility and resiliency of the various portions
22 of bellows 22. Thus, top 26 is relatively less flexible
23 while pleats 34 are relatively more flexible. During the
24 molding operation a mixture of the plastics which will form
25 the less flexible top 26 can be introduced into the mold and
26 then a plastic mixture which results in the more flexible
27 pleats 34 can be introduced into the mold, so that in the
28

1 single molding operation the bellows that molded will
2 exhibit the required differences in flexibility between top 26
3 and pleats 34. This is a known molding procedure.

4
5 Seal 32 is ring-shaped and relatively less flexible than
6 plate 34 due to its size and shape and/or wall thickness
7 and also, if required, due to a change in the composition
8 of the plastic mixture from that of the pleats 34. Seal 32
9 has an annular wall 35 which curves downwardly and inwardly
10 from its point of connection with the underside of the
11 lowermost of pleats 34 to its point of connection with the
12 upper end of the second seal 36 of plunger 10.

13
14 Seal 36 is also ring-shaped but relatively more bulbous
15 and is longer than seal 32, curving continuously downwardly
16 to its narrowest diameter at its point of connection with the
17 lowermost third seal 38.

18
19 Seal 38 is relatively short in height and also ring-shaped
20 in its upper portion 40, from the bottom of which vertically
21 depends its lower portion 42, which is in the form of a
22 short thin vertical cylindrical wall 44 with a horizontal
23 bottom end 46 which enables plunger 10 to rest in the upright
24 position of Figure 1. Portion 40 has a diameter slightly
25 greater than that of the lower end of seal 36, while
26 portion ⁴⁰~~32~~ is of smaller diameter than portion ³²~~40~~. Seals 36
27 and 38 are similar in flexibility and construction to seal 32,
28

1 that is, less flexible than bellows 22.

2
3 Seal 32 is of greater diameter than seal 36, while
4 the maximum diameter of seal 36 is greater than that of
5 seal 38. Seals 32, 36 and 38 provide their sealing effect
6 on their external surfaces which are on the outer surface
7 of plunger 10. With this arrangement, plunger 10 can be
8 used to efficiently seal sink and toilet drain holes of various
9 sizes and shapes. Seals 32, 36 and 38 can be formed in a
10 single molding operation. Moreover, space 24 extends down
11 through the interior of seals 32, 36 and 38. Seals 32, 36
12 and 38 can be formed of the same materials as bellows but of
13 different relative proportions of those materials than for
14 bellows 22 so as to control their flexibility. Moreover,
15 their size, shape and wall thickness contribute to their
16 degree of flexibility.

17
18 Wall 44 can be placed around a drain hole or within it.
19 The edges of the drain hole can abut the underside of
20 portion 40, seal 36 or seal 32, depending on the size of
21 the drain hole. Seals 32, 36 and 38 are sufficiently
22 deformable to increase their sealing effect as they are
23 pressed against the drain hole edges during use of plunger 10.
24 In Fig. 5, it is seen that when plunger 10 is inserted into
25 a drain hole, in this instance, a stepped kitchen sink drain
26 hole 50 defined by sink 52, bulbous curved seal 36 is deformed
27 inwardly by sink ledge 54 at point 56 forming a tight seal
28

1 therewith, while depending vertical wall 44 strikes ledge 58
2 at a lower point 62, again acting as a seal. The effective
3 sealing thus provided by plunger 10 in kitchen sink drain
4 hole 50 enables plunger 10 to function very smoothly and
5 efficiently to unclog drain hole 50. Fig. 4 shows an array
6 of different toilet bowls 64, 66, 68, 70 and 72 in respectively,
7 (a), (b), (c), (d), and (e), all of which can be effectively
8 sealed and unclogged by plunger 10.

9
10 Accordingly, plunger 10 is adapted for efficient use with
11 a variety of sizes and shapes of sink and toilet bowls and
12 drain holes. Plunger 10 can be used in the mode of being
13 disposed around the perimeter of the drain hole. But in most
14 cases, plunger 10 is used by inserting its lower end into
15 the drain hole, with the appropriate sized seal 32, 36 or
16 38 and in some instances wall 44 abutting the edges of the
17 drain hole to efficiently seal it. Plunger 10 avoids the
18 difficulties inherent in trying to fit a plunger cup around
19 the curved surfaces defining the entrance to a toilet or sink
20 drain hole.

21
22 Further advantages of the improved toilet and sink drain
23 plunger of the present invention are as set forth in the
24 foregoing. Various modifications, changes, alterations and
25 additions can be made in the improved plunger of the present
26 invention, its components and parameters. All such
27 modifications, changes, alterations and additions as are
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1 within the scope of the appended claims form part of the
2 present invention.

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WHAT IS CLAIMED IS:

1. An improved toilet and sink drain plunger, said plunger comprising, in combination:

a) an elongated generally upright handle;

b) a generally frusto-conical bellows having a top secured to the lower end of said handle, said bellows including sidewalls depending downwardly and outwardly from said top and defining therewith a central space, said sidewalls comprising a plurality of integral, vertically stacked, interconnected, horizontally extending pleats capable of nesting during compressing of said bellows to a collapsed state; and,

c) toilet and sink drain hole sealing means integral with the lower end of said bellows, said sealing means being disposed on the outer surface of such plunger, said sealing means comprising, in combination,

i. an upper annular curved first ring depending from the lowermost of said pleats, spaced inwardly from the outer periphery of said lowermost pleat and cooperating therewith to form on its outer surface a first drain hole seal;

1 ii. a bulbous annular curved second ring depending
2 from said first ring, spaced inwardly from the outer periphery
3 of said first ring to form on its outer surface a second
4 seal smaller than said first seal; and,

5
6 iii. a third bottom ring secured to the underside of
7 said second seal, smaller in diameter than said second seal
8 and defining the lower end of said plunger, the outer surface
9 of said bottom ring forming a third seal, said seals being
10 integral with each other and said bellows and having a central
11 opening therein communicating with said bellows space.

12
13 2. The ~~improved~~ toilet and sink drain plunger of Claim 1
14 wherein said plunger bellows and seals are of unitary
15 construction, having been integrally joined together in a single
16 molding operation.

17
18 3. The ~~improved~~ toilet and sink drain plunger of Claim 2
19 wherein said bellows and seals are of flexible resilient
20 plastic.

21
22 4. The ~~improved~~ toilet and sink drain plunger of Claim 3
23 wherein said handle is detachable from said bellows and also
24 of plastic.

25
26 5. The improved toilet and sink ~~drain plunger of Claim 3~~
27 wherein said handle is integral with said bellows, of plastic
28

1 and formed with said bellow and seals in a single molding
2 operation.

3
4 6. The ~~improved~~ toilet and sink drain plunger of Claim 1
5 wherein said bottom seal includes an upper bulbous annular
6 ring portion and a lower portion having a short vertical
7 sidewall of smaller diameter than said upper portion.

8
9 7. The ~~improved~~ toilet and sink drain plunger of Claim 6
10 wherein each said ring includes an inwardly and downwardly
11 curved lower part adapted to sealingly engage a toilet or
12 sink drain hole and wherein said second ring is of substantially
13 greater height than said first and third rings and of a
14 continuously curved bulbous shape with its lower end of
15 less diameter than its upper end.

16
17 8. The ~~improved~~ toilet and sink drain plunger of Claim 7
18 wherein the lower end of said plunger is horizontal to enable
19 said plunger to rest in an upright position.

20
21 9. The ~~improved~~ toilet and sink drain plunger of Claim 8
22 wherein said pleats are more flexible than said seals.

23
24 10. An ~~improved~~ toilet and sink drain plunger comprising, in
25 combination:

26 a) a handle;

27 b) a bellows which includes a plurality of horizontally
28

1 extending pleats; and,

2 c) Three toilet and sink drain hole seals disposed on the
3 outside of said plunger in horizontally extending vertically
4 stacked relation, said three seals being ring-shaped and
5 of progressively smaller diameter from the uppermost to the
6 lowermost of said three seals, each said seal having a downwardly
7 and inwardly curved external sealing surface.

8

9 11. The ~~improved~~ toilet and sink drain plunger of Claim 10
10 wherein said handle is vertical and at the upper end of said
11 plunger, wherein said bellows is secured to the bottom of said
12 handle and depends therefrom and wherein said seals are
13 integral with the lower end of said bellows.

14

15 12. The ~~improved~~ toilet and sink drain ^{plunger} ~~plunger~~ of Claim 11
16 wherein said handle, bellows and seals are of plastic.

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ABSTRACT OF THE DISCLOSURE

The present toilet and sink drain plunger seals either around or in a toilet or sink drain hole despite the hole's size, configuration and location. The plunger includes an elongated upstanding handle connected to the top of a depending, preferably frusto-conical, open bottomed bellows in the sidewalls of which are formed a vertically stacked series of interconnected horizontal pleats. The plunger further includes a series of toilet drain hole seals connected to each other and to the bottom of the bellows to form a unitary whole depending below the bellows. The seals are of progressively smaller size from the uppermost to the lowermost and all feature inwardly and downwardly curved sealing surfaces. The seals are rings or doughnuts molded into the plunger body. The bottommost seal bears a short vertical small diameter annular wall depending therefrom and which acts both as a seal and a seat for the plunger. The entire plunger can be formed in a single plastic molding operation or, if desired, in separate molding operations for the handle and remainder of the plunger. The plunger is efficient, light in weight, inexpensive and durable.

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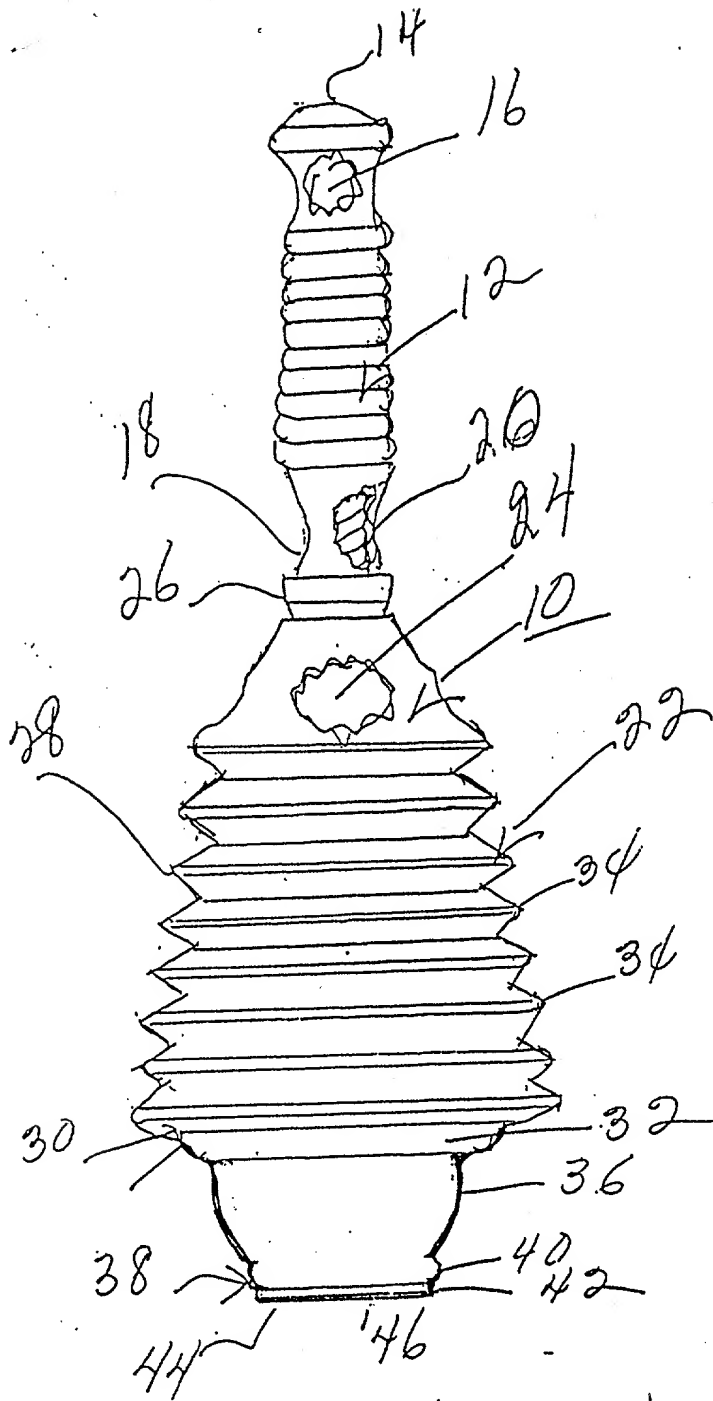


Fig. 1

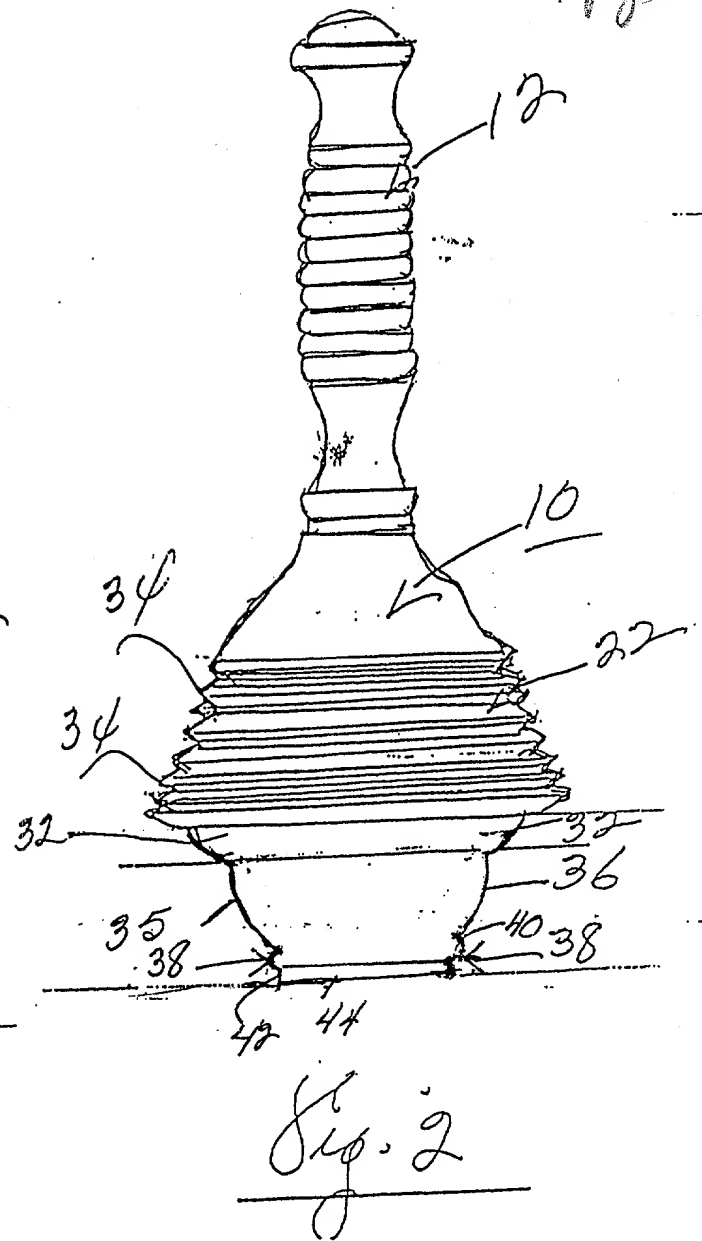
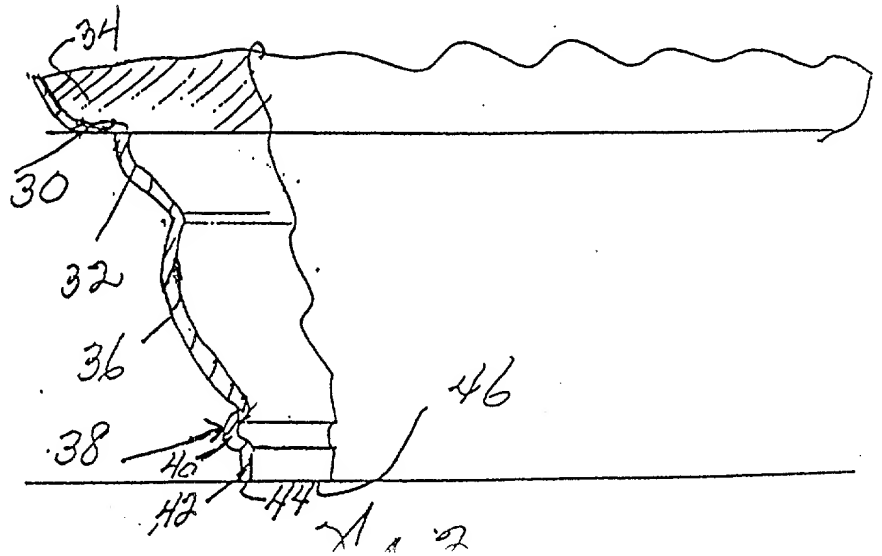
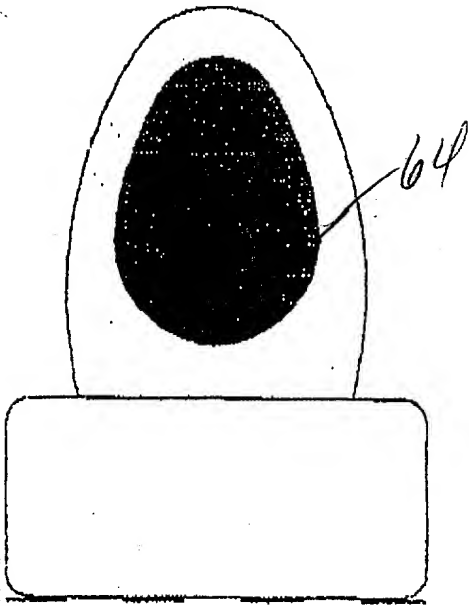
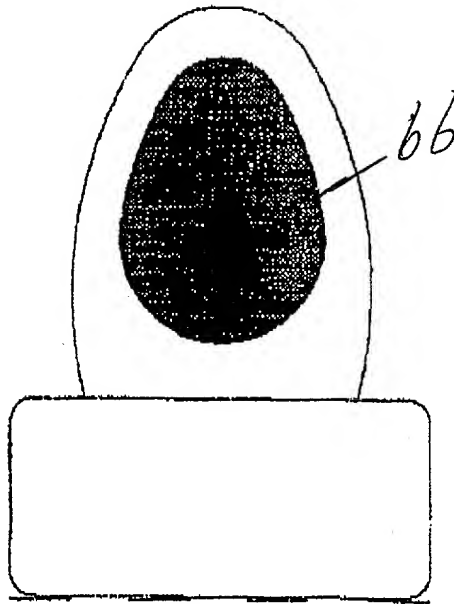


Fig. 2

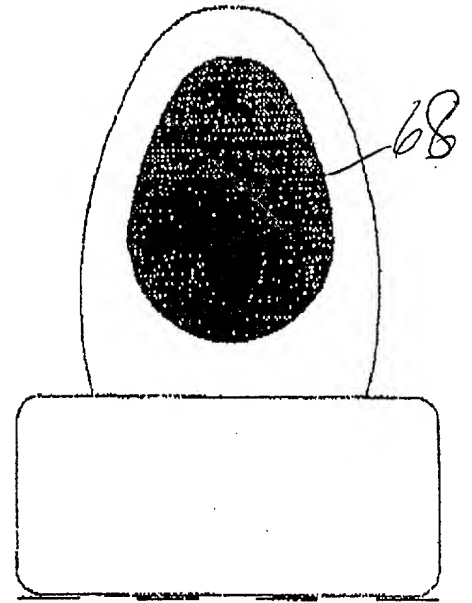




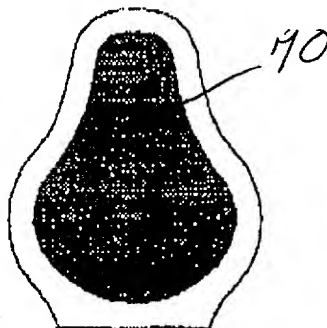
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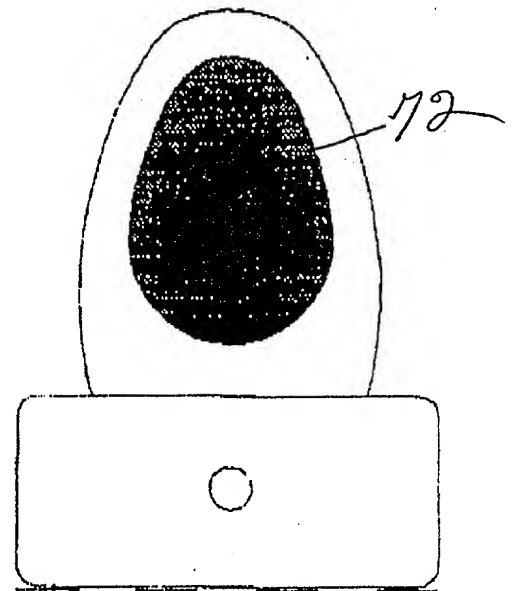
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(c)



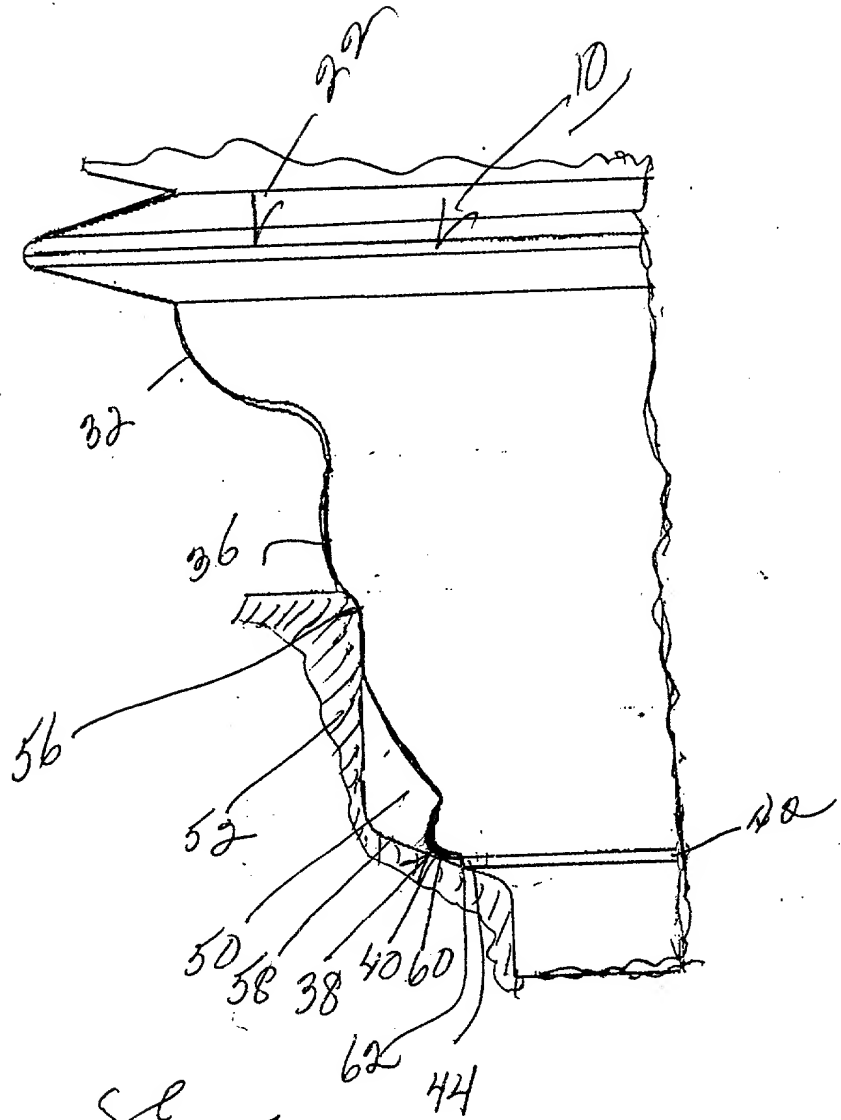
(d)



(e)

Fig. 4

08/637894-4684E980



See
Fig. 5



Applicant or Patentee: GEORGE TASH Docket No. _____
Serial or Patent No.: _____
Filed or Issued: _____
For: IMPROVED TOILET AND SINK DRAIN PLUNGER

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
STATUS (37 CFR 1.9(f) and 1.27(b)) - INDEPENDENT INVENTOR

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled IMPROVED TOILET AND SINK DRAIN PLUNGER

- (☒) the specification filed herewith.
() application serial no. _____, filed _____
() patent no: _____ issued _____

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- (☒) no such person, concern, or organization
() persons, concerns or organizations listed below

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ADDRESS _____

() INDIVIDUAL () SMALL BUSINESS CONCERN () NONPROFIT ORGANIZATION

FULL NAME _____
ADDRESS _____

() INDIVIDUAL () SMALL BUSINESS CONCERN () NONPROFIT ORGANIZATION

FULL NAME _____
ADDRESS _____

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I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

GEORGE TASH
NAME OF INVENTOR NAME OF INVENTOR NAME OF INVENTOR
George Tash
Signature of Inventor Signature of Inventor Signature of Inventor
4-16-96
Date Date Date